

FLOODPLAIN STUDIES

Alternative Floodplain Management Strategies

Technical Studies and Economic Impacts

DISCUSSION DRAFT - April 4, 2002

Note: Corps of Engineers Study (ongoing) designated by "✕."
Proposed Additional Studies designated by "✓."
* Items added since March meeting are underlined.

1. **Evaluate alternative floodplain management strategies** utilized by other communities across the U.S.

2. **Model a 'Do Nothing' Alternative (1'-Rise Floodway).** This step of the study will model the consequences of continuing with our present-day regulations, which allow for up to 1' of rise to occur in flood heights:

✕ Model the existing conditions of three stream reaches:

- Salt Creek from Pioneers Blvd to 'O' Street - 3.6 miles
- Dead Man's Run from 33rd Street to 56th Street - 1.8 miles
- Beal Slough from Salt Creek to 40th Street - 3.8 miles

✕ Moderate scenario: 50% loss of flood storage

✕ Worst-case scenario: 1' rise in flood heights

✕ Demonstrate the hydrologic/hydraulic impact (how high do flood heights rise? how much does the floodplain boundary expand?)

✕ Demonstrate the economic impact (how much more damage is caused to homes or businesses already within the floodplain? how many additional homes or business are brought into the floodplain?)

✕ Delineate potential floodplain boundaries. What would the floodplain boundaries be if there were a 50% loss of flood storage in the floodplain or if there were a full 1' rise in flood heights?

✓ Evaluate the economic impact to public drainage infrastructure if a 1' rise in flood heights occurs.

3. **Model/Evaluate Other Potential Alternatives** (the COE modeling alternatives will utilize the Dead Man's Run stream reach as an example):

- ✕ **'No Net Rise' Alternative.** Evaluate the effect of a 'No Net Rise' alternative, or "0' Rise Floodway," that would require all development to demonstrate that it is causing no rise in the elevation of the 100-year flood.
- ✕ **$\frac{1}{2}$ -Foot Rise Alternative.** Model the effect of designating a " $\frac{1}{2}$ -Foot Rise" floodway. The boundaries of floodways today are established to allow for up to a 1-foot rise in 100-year flood heights. This alternative would model the effect of a wider floodway established to allow for only a $\frac{1}{2}$ -foot of rise.
- ✕ **Compensatory Storage in Flood Fringe.** Evaluate the effect of continuing to regulate no rise in the floodway, while demonstrating no loss of storage in the balance of the floodplain.
- ✕ **Flood insurance savings.** For each scenario, document flood insurance savings possible through the National Flood Insurance Program Community Rating System for adopting a higher standard.
- ✓ Evaluate the benefits of requiring No Net Rise AND Compensatory Storage standards to be met for development in the floodplain.
- ✓ Evaluate a 'Cluster Development' (Open Space Subdivision Design) alternative which allows for the same gross density but where development is clustered outside of the 100-year floodplain on a site. The evaluation should include both mandatory and voluntary scenarios.

4. **Evaluate Economic Impact of Potential Floodplain Management Alternatives.**

✓ **Impact to Private Development.**

1. Evaluate the economic impact of a range of floodplain

management alternatives relative to three land uses, each looking at two scenarios: 1) a large site and 2) a small or otherwise limited site:

- a. Typical residential development
- b. Typical commercial development
- c. Typical industrial development

2. This evaluation should take into account:

- a. The present ability to cluster development in Lincoln through the Community Unit Plan (CUP) or Planned Unit Development (PUD) as well as the marketability of such development.
- b. How different solutions could be applied to properties of different sizes.
- c. The fact that floodplain areas within the existing urban area have a large percentage of industrial zoning.

✓ **Impact to Cost of Public Infrastructure.** Evaluate the economic impact of a range of floodplain management alternatives to the cost of public infrastructure, including bridges, roadways, and other public structures.

5. Further Discussion Items.

✓ **Floodplain 'Mitigation Bank' Concept and Economic Impact.** Evaluate the technical feasibility of a 'Floodplain 'Mitigation' concept which allows for development within the floodplain to 'mitigate' the loss of flood storage on a particular site at another location within the same stream reach. This analysis should include:

- 1. The feasibility of designating hydraulically equivalent sites as mitigation areas

2. An analysis of the practical steps necessary to regulate floodplain development based on such a concept.
3. The costs such 'mitigation'.
4. Appropriateness of mitigation based upon natural/beneficial floodplain functions such as the mitigation of freshwater or saline wetland areas, tree masses or other wildlife habitat.

- ✓ **Floodplain Buyouts.** Discuss the cost/benefit of floodplain property buyouts as experienced by other communities and the feasibility of applying this type of approach within Lincoln.
- ✓ **Greenfield Strategy.** Evaluate a new "greenfield" approach which would apply different strategies or standards to undeveloped floodplain areas without urban zoning or land use designations.
- ✓ **Best Management Practices.** Evaluation/recommendation of "best management development practices" for floodplain areas. This should include consideration of conservation/restoration alternatives for vegetative cover within the floodplain and its importance in mitigating flooding.

* Note: Studies will include a description of the methodology used.